

इंटरनेट

मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 4783 (1982): Thiram Seed Dressing Formulations [FAD 1: Pesticides and Pesticides Residue Analysis]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

BLANK PAGE



IS : 4783 - 1982

Indian Standard
SPECIFICATION FOR
THIRAM SELF DRESSING FORMULATIONS
(*First Revision*)

UDC 6 95 THIRAM 6 1 30 72



© Copyright 1983

INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9, BAHADUR SHAH ZAFAR MARG,
NEW DELHI 110002

Gr 3

January 1983

Indian Standard

SPECIFICATION FOR THIRAM SEED DRESSING FORMULATIONS (*First Revision*)

Pest Control Sectional Committee, AICDC 6

<i>Chairman</i>	<i>Representing</i>
DR K. D. PAHARIA	Directorate of Plant Protection, Quarantine & Storage (Ministry of Agriculture), Faridabad
<i>Members</i>	
DR H. L. BAM	Central Forensic Science Laboratory (Central Bureau of Investigation), New Delhi
DR B. BANERJEE	Tea Research Association, Calcutta
DR G. SATYANARAYAN (<i>Alternate</i>)	
DR N. K. BASU	The Alkali & Chemical Corporation of India Limited, Calcutta
SHRI S. R. NENI (<i>Alternate</i>)	
DR A. K. BHATNAGAR	Hindustan Insecticides Limited, New Delhi
SHRI C. C. ABRAHAM (<i>Alternate</i>)	
CHIEF CHEMIST	Central Revenues Control Laboratory (Ministry of Finance), New Delhi
SHRI S. KRISHNAMURTHY (<i>Alternate</i>)	
CHIEF PLANT PROTECTION OFFICER	Department of Agriculture, Government of Maharashtra, Bombay
CHEMIST INCHARGE, INSECTICIDES TESTING LABORATORY (<i>Alternate</i>)	
SHRI V. G. DESHPANDE	Ciba-Geigy of India Limited, Bombay
SHRI E. A. ALMEIDA (<i>Alternate</i>)	
SHRI OM P. DHAMJA	Export Inspection Council of India, New Delhi
SHRI P. P. RAO (<i>Alternate</i>)	
DR M. S. DHATT	National Malaria Eradication Programme, Delhi
DIRECTOR GENERAL, ARMED FORCES MEDICAL SERVICES	Directorate General Armed Forces Medical Services (Ministry of Defence), New Delhi
DIRECTOR OF AGRICULTURE	Department of Agriculture, Government of Uttar Pradesh, Lucknow
DEPUTY DIRECTOR (PLANT PROTECTION) (<i>Alternate</i>)	
SHRI V. DORAIKAT	Plastic Containers Sectional Committee, MCPD 11, ISI
DRUGS CONTROLLER (INDIA)	Indian Pharmacopoeia Committee (Ministry of Health and Family Welfare), New Delhi
SHRI M. RAVIKANTH (<i>Alternate</i>)	

(*Continued on page 2*)

© Copyright 1983

INDIAN STANDARDS INSTITUTION

This publication is protected under the *Indian Copyright Act* (XIV of 1957) and the production in whole or in part by any means except with written permission of the publisher shall be deemed to be an infringement of copyright under the said Act

(Continued from page 1)

<i>Members</i>	<i>Representing</i>
SHRI G. D. GOKHALE	Bombay Chemicals Private Limited, Bombay
SHRI V. V. KETKAR (<i>Alternate</i>)	
SHRI D. K. JAIN	Punjab United Pesticides and Chemicals Ltd, Chandigarh
JOINT DIRECTOR OF AGRICULTURE (DEVELOPMENT & ICP)	Department of Agriculture, Government of Karna- taka, Mysore
DEPUTY DIRECTOR OF AGRI- CULTURE PLANT PROTIC- TION (<i>Alternate</i>)	
DR M. G. JOTWANI	Entomology Division, Indian Agricultural Research Institute (ICAR), New Delhi
DR R. L. KALRA	Punjab Agricultural University, Ludhiana
DR R. P. CHAWLA (<i>Alternate</i>)	
DR KALYAN SINGH	Chander Sekher Azad University of Agriculture & Technology, Kanpur
DR KRISHAN SINGH	Indian Institute of Sugarcane Research (ICAR), Lucknow
DR S. C. SRIVASTAVA (<i>Alternate</i>)	
DR K. KRISHNAMURTHY	Ministry of Agriculture (Department of Food), New Delhi
SHRI G. N. BHARDWAJ (<i>Alternate</i>)	
SHRI S. G. KRISHNAN	National Organic Chemical Industries Limited, Bombay
DR J. S. VERMA (<i>Alternate</i>)	
DR V. LAKSHMINARAYANA	Directorate of Plant Protection, Quarantine & Storage (Ministry of Agriculture), Faridabad
SHRI V. C. BHARGAVA (<i>Alternate</i>)	
SHRI S. K. LUTHRA	Directorate General of Technical Development, New Delhi
SHRI S. C. BAJAJ (<i>Alternate</i>)	
DR J. C. MAJUMDAR	BASF India Limited, New Delhi
DR B. P. CHANDRASEKHAR (<i>Alternate</i>)	
SHRI S. K. MAJUMDAR	Central Food Technological Research Institute (CSIR), Mysore
SHRI M. MUTHU (<i>Alternate</i>)	
SHRI O. N. MEHROTRA	Ministry of Defence (R & D)
SHRI M. G. CHATTERJEE (<i>Alternate</i>)	
SHRI K. S. MEHTA	Bharat Pulverising Mills Private Ltd, Bombay
SHRI S. CHATTERJI (<i>Alternate</i>)	
SHRI L. S. MIRLE	Agromore Limited, Bangalore
SHRI S. K. RAMAN (<i>Alternate</i>)	
SHRI J. M. MODI	Pesticides Formulators Association of India (S.S.I.), Bombay
DR S. R. BAROAH (<i>Alternate</i>)	
DR A. L. MOOKERJEE	Cyanamid India Limited, Bombay
SHRI J. P. PARIKH (<i>Alternate</i>)	
DR S. K. MUKERJEE	Agricultural Chemicals Division, Indian Agricultural Research Institute (ICAR), New Delhi
DR N. K. ROY (<i>Alternate</i>)	
SHRI K. R. NARAYANA RAO	Food Corporation of India, New Delhi
SMT K. K. M. BHAVNANI (<i>Alternate</i>)	
SHRI I. NARSAREDDY	Department of Agriculture, Government of Andhra Pradesh, Hyderabad
SHRI C. DHARMA RAO (<i>Alternate</i>)	

(Continued on page 9)

(Continued from page 2)

<i>Members</i>	<i>Representing</i>
SHRI G. NATARAJAN	Indofil Chemicals Limited, Bombay
DR V. N. NIGAM	Ministry of Defence (DGI)
SHRI P. N. AGARWAL (<i>Alternate</i>)	
SHRI M. M. PADALIA	Department of Agriculture, Government of Gujarat, Ahmadabad
SHRI R. G. JADEJA (<i>Alternate</i>)	
DR S. Y. PANDIT	Bayer (India) Limited, Bombay
SHRI C. G. DHARNE (<i>Alternate</i>)	
DR P. S. PHADKI	Sandoz (India) Limited, Thane
SHRI A. V. NATU (<i>Alternate</i>)	
SHRI S. M. PRADHAN	Metal Container Sectional Committee, MCPD 12, ISI
SHRI Y. A. PRADHAN	Rallis India Limited, Bombay
DR Z. J. KAPADIA (<i>Alternate</i>)	
SHRI D. N. V. RAO	Tata Chemicals Limited, Mithapur
SHRI C. NEELKANTAN (<i>Alternate</i>)	
REPRESENTATIVE	Pesticides Association of India, New Delhi
SECRETARY	Central Insecticides Board, Directorate of Plant Protection, Quarantine & Storage (Ministry of Agriculture), Faridabad
DR R. C. GUPTA (<i>Alternate</i>)	
SHRI A. C. SHROFF	Excel Industries Limited, Bombay
SHRI P. V. KANGO (<i>Alternate</i>)	
DR K. S. SINGH	Indian Veterinary Research Institute (ICAR), Izatnagar
SHRI S. C. SRIVASTAVA (<i>Alternate</i>)	
SHRI N. S. VENKATARAMAN	Department of Agriculture, Government of Tamil Nadu, Madras
DR R. V. VENKATARATNAM	Regional Research Laboratory (CSIR), Hyderabad
DR NAGABUSHAN RAO (<i>Alternate</i>)	
DR R. R. VENKATESWARAN	Union Carbide (India) Limited, New Delhi
DR K. N. SHRIVASTAVA (<i>Alternate</i>)	
SHRI E. R. VICCAJIE	Printer and Flexible Packaging Sectional Committee, MCPD 14, ISI
SHRI N. G. WAGLE	Pest Control (India) Private Limited, Bombay
SHRI M. R. BAJIKAR (<i>Alternate</i>)	
DR B. L. WATTAL	National Institute of Communicable Diseases, Delhi
SHRI G. C. JOSHI (<i>Alternate</i>)	
SHRI G. PURNANANDAM, Director (Agri & Food)	Director General, ISI (<i>Ex-officio Member</i>)

Secretary

SHRI M. L. KUMAR
Deputy Director (Agri & Food), ISI

AMENDMENT NO. 1 JULY 1989
TO
IS : 4783 - 1982 SPECIFICATION FOR THIIRAM
SEED DRESSING FORMULATIONS

(First Revision)

(First cover, pages 1, 3 and 4) — Substitute 'thiram DS' for 'thiram seed dressing formulations' wherever occurs.

(Page 3, clause 0.2) — Substitute the following for the existing clause:

'0.2 Thiram DS are largely employed as dry seed dresser in the protection of seeds against externally seed borne fungal infections.'

(AFCDC 6)

Printed at Printwell Printers, Delhi, India

AMENDMENT NO. 2 MAY 1994
TO
IS 4783 : 1982 SPECIFICATION FOR THIRAM SEED
DRESSING FORMULATIONS

(First Revision)

(Page 5, clause 4.1) — Substitute the following for the existing:

‘When freshly manufactured material in bulk quantity is offered for inspection, representative samples of the material shall be drawn and tested as prescribed in IS 10627 : 1983 within 90 days of its manufacture. When the material is offered for inspection after 90 days of its manufacture, sampling shall be done as prescribed in IS 10627 : 1983. However, the criteria for conformity of the material when tested, shall be the limits of tolerances, as applicable over the declared nominal value and given under clause 2.3.1 of the standard.’

Indian Standard
SPECIFICATION FOR
THIRAM SEED DRESSING FORMULATIONS
(*First Revision*)

0. F O R E W O R D

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 10 November 1982, after the draft finalized by the Pest Control Sectional Committee had been approved by the Agricultural and Food Products Division Council and the Chemical Division Council.

0.2 Thiram seed dressing formulations are employed in the protection of seeds against externally seed borne fungal infections

0.3 Thiram seed dressing formulations are generally manufactured to contain 75 percent (*m/m*) of thiram, technical.

0.4 This standard was first published in 1968. Subsequently one amendment was issued. Since this standard was prepared more than a decade ago, it was considered desirable to issue a revised version of the standard in order to make it up to date. The present revision incorporates latest packing and marking requirements. Besides, opportunity has been taken to give reference to the test methods given in IS : 4320-1982* for the sake of uniformity.

0.5 In the preparation of this standard, due consideration has been given to the provisions of the *Insecticides Act*, 1968 and the Rules framed thereunder. However, this standard is subject to the restrictions imposed under these, wherever applicable.

0.6 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960†. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Specification for thiram, technical (*first revision*).

†Rules for rounding off numerical values (*revised*).

IS : 4783 - 1982

1. SCOPE

1.1 This standard prescribes the requirements and methods of sampling and test for thiram seed dressing formulations.

2. REQUIREMENTS

2.1 Constituents — The material shall consist of thiram, technical, uniformly incorporated in a suitable inert filler, such as talc and a suitable oil.

2.1.1 Thiram technical employed in the formulation of this material shall conform to IS : 4320-1982*.

2.2 Physical — The material shall comply with the following physical requirements.

2.2.1 Description — The material shall be in the form of a powder, free from any hard lumps and shall be capable of adhering to smooth surfaces.

2.2.2 Colour — The colour of the material shall be subject to an agreement between the purchaser and the supplier.

2.2.3 Sieving Requirement — Not less than 98 percent by mass of the material shall pass through 150-micron IS Sieve [*see* IS : 460 (Part I)-1978†] when tested by the method prescribed in Appendix A.

NOTE — BS Sieve 100, ASTM Sieve 100, Tyler Sieve 100 have their apertures within the limits specified for 150-micron IS Sieve and may, therefore, be used in its place.

2.3 Chemical — The material shall comply with the following chemical requirement.

2.3.1 Thiram Content — When determined by the method prescribed in Appendix A of IS : 4320-1982*, the observed thiram content shall not differ from the declared nominal value by more than appropriate tolerances as given below:

<i>Nominal Value, Percent</i>	<i>Tolerance Limits, Percent</i>	
Up to 9	+ 10 — 5	} of the nominal value
Above 9 and below 50	± 5	
50 and above	+ 5 — 3	

*Specification for thiram, technical (*first revision*).

†Specification for test sieves : Part I Wire cloth test sieves (*second revision*).

2.3.1.1 The actual value of thiram content in the formulation shall be calculated to the third decimal place and then rounded off to second decimal place before applying the tolerance given in **2.3.1**.

2.3.1.2 The average thiram content of all samples taken shall not be less than the declared nominal content.

3. PACKING AND MARKING

3.1 Packing -- The material shall be packed as per requirements given in IS : 8190 (Part I)-1980*.

3.2 Marking -- The containers shall bear legibly and indelibly the following information and any other additional information as is necessary under the Insecticides Act and the Rules:

- a) Name of the material;
- b) Name of the manufacturer;
- c) Date of manufacture;
- d) Batch number;
- e) Net mass of contents;
- f) Nominal thiram content, percent (m/m); and
- g) A cautionary notice as worded in Insecticides Act and Rules.

3.2.1 The containers may also be marked with the ISI Certification Mark.

NOTE -- The use of the ISI Certification Mark is governed by the provision of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors may be obtained from the Indian Standards Institution.

4. SAMPLING

4.1 Representative samples of the material shall be drawn as prescribed in 'Indian Standard methods for sampling of pesticides and their formulations' (*under preparation*).

NOTE -- Till such time the standard under preparation is published, the samples shall be drawn as agreed to between the parties concerned.

*Requirements for packing of pesticides : Part I Solid pesticides (*first revision*).

5. TESTS

5.1 Tests shall be carried out by the methods as prescribed in **2.2.3** and **2.3.1**.

5.2 Quality of Reagents — Unless specified otherwise, pure chemicals and distilled water (*see* IS : 1070-1977*) shall be employed in the tests.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the results of analysis.

A P P E N D I X A

(*Clause 2 2.3*)

TEST FOR SIEVING REQUIREMENT

A-1. PRINCIPLE

A-1.1 It is a device for forced wet sieving with the help of a water jet by using Gallie-Porritt grit tester (*see* **A-2.2**).

A-2. APPARATUS

A-2.1 Sieves of the desired aperture (150-micron IS Sieve) to fit into the sieve cup of the apparatus.

A-2.2 Gallie-Porritt Grit Tester — The Gallie-Porritt grit tester (Fig. 1) consists of a metal funnel (into which the material required for sieving is poured in the form of a slurry) which terminates at the bottom in a short cylindrical outlet. A sieve cup containing the sieve of desired aperture may be screwed on to the base of the cylindrical outlet. Water under pressure is supplied by a tube fitted with a nozzle designed to discharge a spreading jet through the sieve; the tube is so fitted that the distance of the orifice in relation to the sieve may be adjusted. The tube, at its top, carries a filtration arrangement to ensure supply of water free from grit. The wire gauze of the filter should be at least as fine as that of the test sieve. A branch line of the tube from the filter outlet serves to provide filtered water as secondary supply for washing down the sample in the sieve cup. All these tubes are provided with necessary stop cocks and valves.

*Specification for water for general laboratory use (*second revision*).

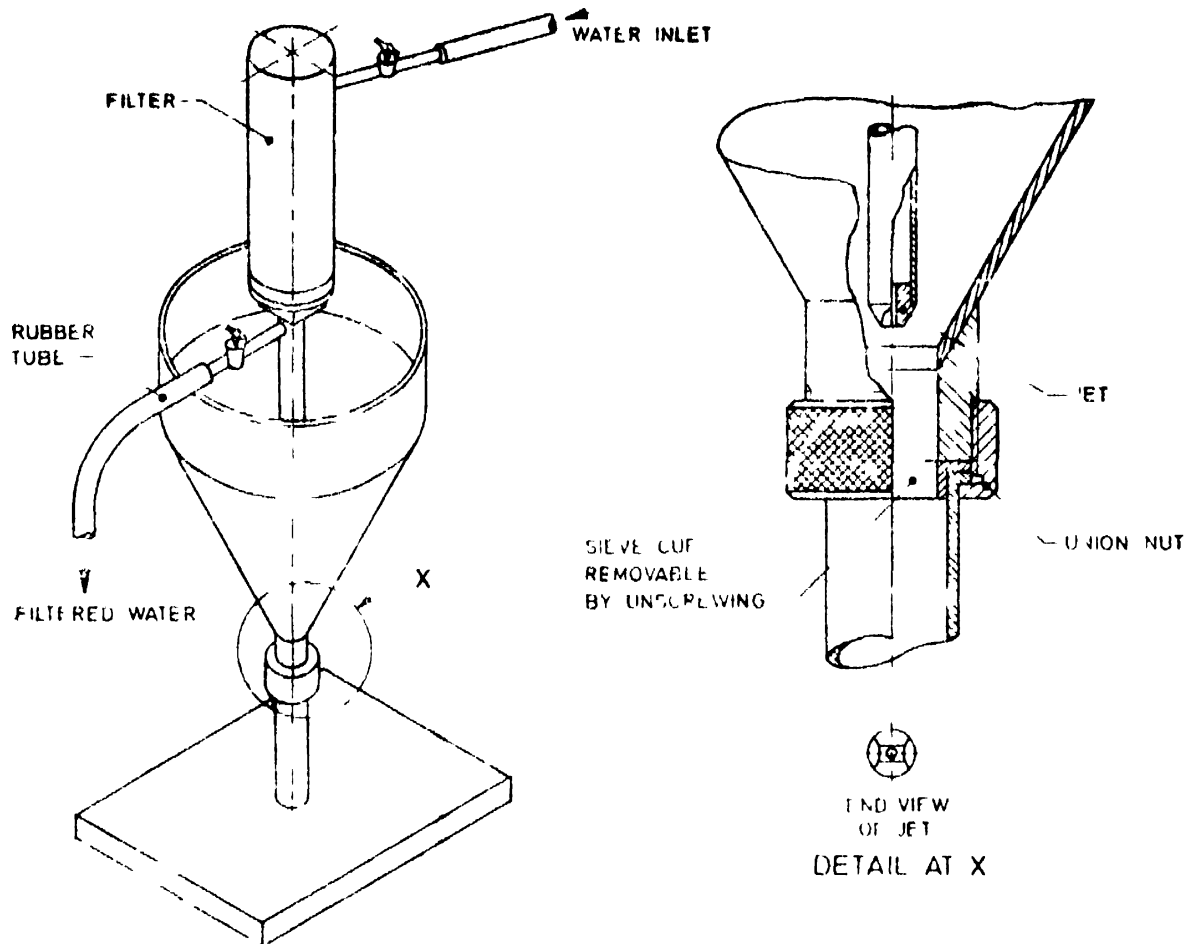


FIG 1 GALLIE-PORRITT GRIF TESTER FOR SIEVING

A-3. PROCEDURE

A-3.1 Weigh the clean dry empty sieve, place it in the sieve cup and fix the assembly to the base of the cylindrical outlet. Weigh out about 20 g or any suitable quantity of the material under test into a beaker and make a uniform slurry in water, if necessary, with a suitable wetting agent. Transfer the slurry into the funnel and thoroughly agitate by a stream of water from the secondary supply. This is continued until the funnel is about half full of water. Turn on the high pressure jet slowly until fully opened, and adjust the position of the nozzle until there is no disturbance on the surface and the level is sinking. Bring the secondary supply into use to maintain the level constant and to wash down any solid matter which may be adhering to the sides.

A-3.2 When the most satisfactory operating conditions have been so attained, the discharge pipe below the sieve is completely filled with water. Continue the operation until the water issuing through the sieve is free from any particle of the material under test.

IS : 4783 - 1982

A-3.3 Reduce the rate of flow of water through the jet, wash down any residual matter adhering to the sides of the funnel into the lower portion of the apparatus, and adjust the jet to the rate which just keeps the cylindrical portion full of violently agitated water. When the residual matter has been thus washed, turn off the jet and wash the grit down into the cup.

A-3.4 Take out the sieve containing the residue and dry it at 60°C to constant mass.

A-4. CALCULATION

A-4.1 Material passing through 150-micron
IS Sieve, percent by mass
$$= \frac{M}{m} \times 100$$

where

m = mass in g of the material retained on the sieve, and

M = mass in g of the material taken for the test.

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

QUANTITY	UNIT	SYMBOL
Length *	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

QUANTITY	UNIT	SYMBOL
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

QUANTITY	UNIT	SYMBOL	DEFINITION
Force	newton	N	$N = 1 \text{ kg.m/s}^2$
Energy	joule	J	$1 \text{ J} = 1 \text{ N.m}$
Power	watt	W	$1 \text{ W} = 1 \text{ J/s}$
Flux	weber	Wb	$1 \text{ Wb} = 1 \text{ V.s}$
Flux density	tesla	T	$1 \text{ T} = 1 \text{ Wb/m}^2$
Frequency	hertz	Hz	$1 \text{ Hz} = 1 \text{ c/s (s}^{-1}\text{)}$
Electric conductance	siemens	S	$1 \text{ S} = 1 \text{ A/V}$
Electromotive force	volt	V	$1 \text{ V} = 1 \text{ W/A}$
Pressure, stress	pascal	Pa	$1 \text{ Pa} = 1 \text{ N/m}^2$

PUBLICATIONS OF INDIAN STANDARDS INSTITUTION INDIAN STANDARDS

Over 10 000 Indian Standards covering various subjects have been issued so far. Of these the standards belonging to the Agricultural and Food Products Group fall under the following categories:

Abattoir	Food additives
Agricultural machinery and tractors	Foodgrain handling and storage
Alcoholic drinks	Fruit and vegetables
Animal feeds	Honey and by-products
Animal housing and equipment	Infant food
Bakery and confectionery	Laboratory animals
Bee keeping equipment	Meat and meat products
Beverages	Pest control equipment
Cereals, pulses and their products	Pesticide formulations
Cocoa products	Pesticides, technical grade and general
Coffee and its products	Propagation materials
Dairy equipment	Regulated market yards
Dairy industry, layout plans	Sensory evaluation
Dairy industry, methods of test	Spices and condiments
Dairy laboratory apparatus	Starch derived products
Dairy products	Sugars and by products
Edible starch and starchy products	Tea
Fish and fishery products	Tobacco products
Fish industry, sanitary conditions	Transport of live animals

OTHER PUBLICATIONS

ISI Publication List (1st 4th Month)	P	4.00
Standard Symbols	R	36.00
Annual ISI Bulletin		
Standard Monthlies (A, B, C)	P	0.40
Standard Symbols	P	3.00
Annual Review (1st 4th 7th 10th 13th)	1 x 2 (0.15) 7 (0.70)	
ISI Handbook	1	100.00

INDIAN STANDARDS INSTITUTION

Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002

Telephones . 26 60 21, 27 01 31

Telegrams . Manaksanstha

Regional Office

Western . Novelt Chamber, Grant Road

Central . 5 Chatterjee Approach

Southern . C.I.T. Chamber, Adyar

Northern . B-9, Phase VII

Telephone

KOLKATA 100007 32 02 09

CALCUTTA 200002 27 00 10

MADRAS 600020 41 24 42

SAS NAGAR

(MOHALLA) 160001

Branch Office

Pushpak, Nirmal House, Shukla Marg, Kharagpur

4 Block, Unity Bldg, Narasimharaja Square

Ganguli Complex, B-1, Indira Road, 1st Floor, Nagpur

221 Kalyani Arcade

2806, L.S. Gupta Marg

R-14 Yudh to Marg, Scheme

117-118 B Sirvodaya Nagar

Pathipura Industrial Estate

Hantex Bldg (2nd Floor) Rly Station Road

AHMADABAD 380001 2 03 91

BANGALORE 560002 2 76 19

BHOPAL 46200 6 27 16

BHUBANESHWAR 751014 5 26 27

HYDERABAD 500001 22 10 93

JAMNUR 362005 6 95 52

KANPUR 208005 4 09 92

PATNA 300013 6 28 08

TRIVANDRUM 695001 32 27

Printed at Printograph, New Delhi, India